

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

AS22759/21

FEDERAL SUPPLY CLASS
6145

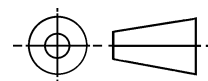
NOTICE

THIS DOCUMENT HAS BEEN TAKEN DIRECTLY FROM U.S. MILITARY SPECIFICATION MIL-W-22759/21, NOTICE 1, AMENDMENT 1 AND CONTAINS ONLY MINOR EDITORIAL AND FORMAT CHANGES REQUIRED TO BRING IT INTO CONFORMANCE WITH THE PUBLISHING REQUIREMENTS OF SAE TECHNICAL STANDARDS. THE INITIAL RELEASE OF THIS DOCUMENT IS INTENDED TO REPLACE MIL-W-22759/21, NOTICE 1, AMENDMENT 1. ANY PART NUMBERS ESTABLISHED BY THE ORIGINAL SPECIFICATION REMAIN UNCHANGED.

THE ORIGINAL MILITARY SPECIFICATION WAS ADOPTED AS AN SAE STANDARD UNDER THE PROVISIONS OF THE SAE TECHNICAL STANDARDS BOARD (TSB) RULES AND REGULATIONS (TSB 001) PERTAINING TO ACCELERATED ADOPTION OF GOVERNMENT SPECIFICATIONS AND STANDARDS. TSB RULES PROVIDE FOR (A) THE PUBLICATION OF PORTIONS OF UNREVISED GOVERNMENT SPECIFICATIONS AND STANDARDS WITHOUT CONSENSUS VOTING AT THE SAE COMMITTEE LEVEL, AND (B) THE USE OF THE EXISTING GOVERNMENT SPECIFICATION OR STANDARD FORMAT.

UNDER DEPARTMENT OF DEFENSE POLICIES AND PROCEDURES, ANY QUALIFICATION REQUIREMENTS AND ASSOCIATED QUALIFIED PRODUCTS LISTS ARE MANDATORY FOR DOD CONTRACTS. ANY REQUIREMENT RELATING TO QUALIFIED PRODUCTS LISTS (QPL'S) HAS NOT BEEN ADOPTED BY SAE AND IS NOT PART OF THIS SAE TECHNICAL DOCUMENT.

THIRD ANGLE PROJECTION



ISSUED 2001-07

PREPARED BY SAE SUBCOMMITTEE AE-8D

SAE The Engineering Society
For Advancing Mobility
INTERNATIONAL
Land Sea Air and Space®
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE STANDARD

WIRE, ELECTRIC, FLUOROPOLYMER-INSULATED,
EXTRUDED TFE, NICKEL-COATED HIGH STRENGTH
COPPER ALLOY CONDUCTOR, 1000-VOLT

AS22759/21
SHEET 1 OF 4

The complete requirements for procuring the wire described herein shall consist of this document and the issue in effect of Specification MIL-W-22759.

AS22759/21

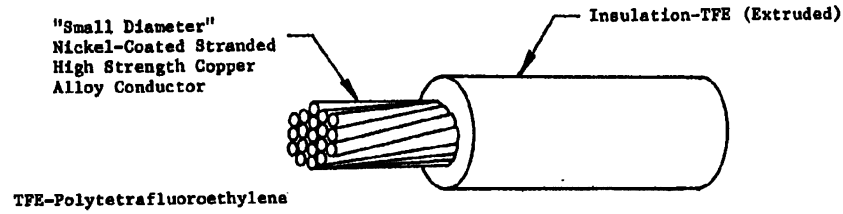


TABLE I. CONSTRUCTION DETAILS

Part No. 1/	Wire size	Stranding (Number of strands X AWG gage of strands)	Diameter of stranded conductor (inches)		Finished wire		
			(min)	(max)	Resistance at 20°C (68°F) (ohms/1000 ft) (max)	Diameter (inches)	Weight (lbs/1000 ft) (max)
M22759/21-28-*	28	7 X 36	.014	0.016	79.0	.043 \pm .002	1.93
M22759/21-26-*	26	19 X 38	.018	0.020	49.4	.048 \pm .002	2.60
M22759/21-24-*	24	19 X 36	.023	0.025	30.1	.053 \pm .002	3.38
M22759/21-22-*	22	19 X 34	.029	0.031	18.6	.060 \pm .002	4.61
M22759/21-20-*	20	19 X 32	.037	0.040	11.4	.068 \pm .002	6.43

1/ PART NO.: The asterisks in the part number column, Tables I and II, shall be replaced by color code designators in accordance with MIL-STD-681. Examples: Size 20, white - M22759/21-20-9; white with orange stripe - M22759/21-20-93.

TABLE II. PERFORMANCE DETAILS

Part No.	Abrasion resistance (Procedure II)				Bend testing			
	Resistance (inches of tape) (min) (initial condition)	Weight support bracket	Weight (lbs)	Tension load (lbs)	Mandrel diameter (inches) (+3%)		Test load (lbs) (+3%)	
					Life cycle (oven & bend tests) <u>1</u> /	Gold bend test	Life cycle (oven & bend tests) <u>1</u> /	Cold bend test
M22759/21-28-*	24	A	.50	1.0	.125	.250	.50	
M22759/21-26-*	24	A	.50	1.0	.125	.250	.50	
M22759/21-24-*	30	A	.50	1.0	.125	.250	.50	
M22759/21-22-*	30	A	.50	1.0	.250	.375	.75	
M22759/21-20-*	30	A	.50	1.0	.250	.375	.75	

1/ Also for bend tests after immersion.

WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 260°C (500°F) max conductor temperature

VOLTAGE RATING: 1000 volts (rms) at sea level

ABRASION RESISTANCE AFTER IMMERSION: No requirement

ACID RESISTANCE:

Required

Dielectric test, 5000 volts (rms), 60 Hz

BLOCKING: 260 ±2°C (500 ±3.6°F)

COLOR: In accordance with MIL-STD-104, Class 1; white preferred

COLOR STRIPING OR BANDING DURABILITY: 250 cycles (500 strokes) (min), 500 grams weight

DIELECTRIC TEST AFTER IMMERSION: 5000 volts (rms), 60 Hz

FLAMMABILITY: Post-flame dielectric test not required

HUMIDITY RESISTANCE: No requirement

IDENTIFICATION DURABILITY: 125 cycles (250 strokes) (min), 500 grams weight

IMPULSE DIELECTRIC TEST: 9.5 kilovolts (peak), 100% test

INSULATION RESISTANCE: 50,000 megohms for 1000 ft (min)

LIFE CYCLE:

Oven temperature, 275 ±2°C (527 ±3.6°F)

Dielectric test, 5000 volts (rms), 60 Hz

LOW TEMPERATURE (COLD BEND):

Bend temperature: -65 ±2°C (-85 ±3.6°F)

Dielectric test, 5000 volts (rms), 60 Hz

SHRINKAGE: 0.03 inch max at 290 ±2°C (554 ±3.6°F)

SMOKE: 290°C (554°F)

SPARK TEST OF PRIMARY INSULATION: Not required

	<p>SURFACE RESISTANCE: 500 megohm-inches (min), initial and final readings</p>
AS22759/21	<p>THERMAL SHOCK: Oven temperature, 260 ±2°C (500 ±3.6°F) Max change in measurement, 0.060 inch</p> <p>WICKING: No requirement</p> <p>WIRE LENGTH REQUIREMENTS: Schedule A</p> <p>WRAP TEST: “Wrap back” test required; no cracking Oven temperature, 313 ±2°C (595.4 ±3.6°F)</p>
<p>SAE <small>The Engineering Society For Advancing Mobility Land Sea Air and Space®</small> INTERNATIONAL <small>400 Commonwealth Drive, Warrendale, PA 15096-0001</small></p>	
<p>AEROSPACE STANDARD</p> <p>WIRE, ELECTRIC, FLUOROPOLYMER-INSULATED, EXTRUDED TFE, NICKEL-COATED HIGH STRENGTH COPPER ALLOY CONDUCTOR, 1000-VOLT</p>	
<p>AS22759/21 SHEET 4 OF 4</p>	